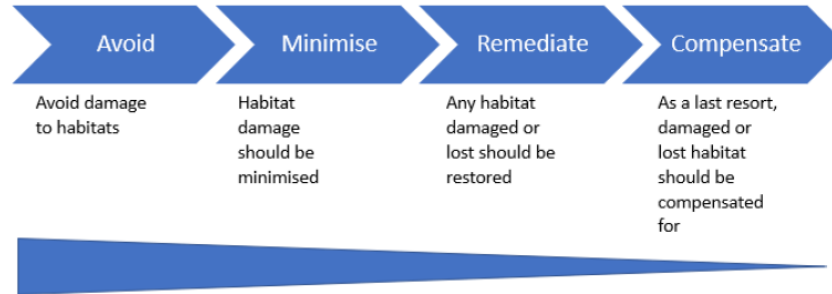


No	Section Heading	Contents
	Summary	
1.0	Introduction	1 Whitcher Wildlife Ltd was commissioned by Mr David Green to carry out Biodiversity Net Gain (BNG) Feasibility Assessment at Pine Lodge, Hood Green (central grid ref SE 31751 02753) to support a planning application (application ref: 2021/0852). 1.1 Pine Lodge has been vacant for some years. A planning application has been submitted to Barnsley Council to demolish the existing building and replace with a new dwelling. An Ecological Impact Assessment (EclA) was submitted in 2020 in support of the original application, this has since been updated in 2022, with this BNG report being supplied in support of the EclA. 1.2 Pine Lodge has historic use as a residential dwelling. The property contains a single-storey building and surrounding amenity grassland gardens with deciduous and conifer trees, scrub, introduced shrubs and native-species poor hedgerows. 1.3 The development plans include demolishing the residential building and replace with another one and a half storey residential building within the same footprint and build new garages to the rear of the property. The amenity grassland will be converted to wildflower meadow, except for a terraced garden immediately to the south of the building. The tree line of conifer and deciduous trees to the west will be felled and replaced with a metal park fence. Several trees within the garden will be removed and

		replaced with some specimen pine trees. The hedgerow to the east will be enhanced and a row of oak trees is to be added. Some ornamental planting will be implemented immediately to the rear of the building. Mixed specimen rhododendron plants are to be added to the rear of the property. 1.4 It should be noted that some of the landscaping within this design has been requested by and agreed with Historic England to remain in-keeping with the aesthetic of the grounds. 1.5 The following assessment has been informed by an EcIA and Preliminary Ecological Appraisal (PEA) carried out by Whitcher Wildlife Ltd in 2022. Biodiversity Net Gain calculations were guided by the BSI British Standard 'BS8683: Process for Designing and Implementing Biodiversity Net Gain' (The British Standards Institution, 2021) and all calculation carried out using Biodiversity Net Gain Metric V3.1 (Natural England, 2022). 1.6 The aim of this study is to ascertain the feasibility of Biodiversity Net Gain within this development and make proposals for how this can be achieved to ensure no net loss during the development. 1.7 As set out in the Environment Act (2019) and National Planning Policy Framework, biodiversity net gains should be provided by planning where possible. The key components of BNG are a minimum of 10% gain required using the metric or approval of net gain plan and the habitat must be secured for at least 30 years.
2.0	Methods	2.1 A Preliminary Ecological Appraisal (PEA) was carried out in June 2022 by Derek Whitcher. The PEA report produced was used to inform the Biodiversity

	Net Gain assessment. As part of the PEA, an in-depth data search of 2km radius around the site was requested from Barnsley Biological Records Centre. 2.2 Derek Whitcher has over twenty years' experience of surveying for wildlife and has run his own wildlife consultancy since 1998. He has extensive experience of a wide variety of survey techniques for a variety of species of protected wildlife supplemented by attendance on a wide range of training courses through CIEEM, FSC and BCT. As a member of CIEEM he is committed to continuous professional development, a continual process of learning and career development, a condition of CIEEM membership. He holds current Natural England survey licences for barn owl, bat, great crested newt and white clawed crayfish. 2.3 The Biodiversity Net Gain assessments and report was produced by Fern Oscroft-Crompton. Fern has four years' professional experience within the ecology sector, with a focus on Biodiversity Net Gain within the last year. Fern has undertaken CIEEM training for the use of the BNG metric version 3.1. Fern also has experience and competence in Preliminary Ecological Appraisals, Phase 1 habitat surveys, and is gaining experience using the UKHab classification system. Fern is CIEEM registered ecologist, and therefore is committed to continuous professional development and meeting CIEEMs high standards of work. 2.4 The assessment was carried out using BSI British Standard BS8683 and CIEEM's Good Practice Principled of BNG and calculates the change in ecological value of the site by comparing the number of 'biodiversity units' pre- and post-development for both linear and area habitats. The 'biodiversity units' are based on the type, size, condition and location of the habitat within the development site.
--	--

2.5 The mitigation hierarchy (DEFRA, 2018; See below) was taken into consideration when planning the BNG of the development. Habitat destructions was avoided or minimised where possible and any habitat loss is restored, or compensated for.



2.6 Biodiversity Metric V3.1 was used for the calculations as the site area is in excess of 500m².

2.7 Biodiversity Metric V3.1 was used to calculate the 'baseline units' for the habitats within the development site. The 'baseline units' are determined by the size, type, 'Condition' and 'Distinctiveness' of the habitats within the development site. The Habitats Condition Sheet, from within the technical supplement, was used for the condition assessments on site for each of the habitats.

2.8 The baseline habitats within the development site were classified using the UK Habitat Classification System (UKHab Ltd, 2018), and the information input into the metric. Linear habitats were measured in kilometres, area habitats were measured in hectares. QGIS was used to measure and map these habitats.

2.9 Post-development plans were obtained accurately by accessing CAD files and overlaying these onto habitat maps, to assess the level of habitat loss resulting from the development. Future biodiversity habitat units were

		obtained by assessing retained, enhanced, and created habitat areas, using the target condition and distinctiveness. Other factors included habitat connectivity, spatial importance and temporal delivery risk. 2.10 This report is based on CIEEM’s Biodiversity Net Gain Report and Audit Template (2021).						
3.0	Baseline Conditions	3.1 The baseline condition assessments within this report have been based on the EclA produced by Whitcher Wildlife Ltd in July 2022. Please refer to this document for the full species composition of each of the habitats listed within this report. 3.2 The site comprised of a single residential building with an extensive garden surrounding the property. The total area of the development site was 0.825ha. The property comprised the following habitats: 3.2.1 The residential building was a single-storey bungalow with some hardstanding surrounding the foundations and a tarmac access up through the property. The hardstanding and buildings foundations totalled an area of 0.16ha. 3.2.2 The property was set within ‘Moderate’ condition modified grassland totalling 0.5ha. The grassland was dominated by perennial ryegrass (<i>Lolium perenne</i>), annual meadow grass (<i>Poa annua</i>), Yorkshire fog (<i>Holcus lanatus</i>), fescue (<i>Festuca sp</i>), and common bent (<i>Agrostis capillaris</i>). At the time of survey, the grassland was mown short and maintained for aesthetic reasons. The grassland passed five of the seven assessment criteria. <table><tr><th>Condition Assessment Criteria</th><th>Condition Achieved (Y/N)</th></tr><tr><td>1 – Species per m2</td><td>No</td></tr><tr><td>2 – Sward height</td><td>No</td></tr></table>	Condition Assessment Criteria	Condition Achieved (Y/N)	1 – Species per m2	No	2 – Sward height	No
Condition Assessment Criteria	Condition Achieved (Y/N)							
1 – Species per m2	No							
2 – Sward height	No							

			3 – Scattered scrub cover	Yes	
			4 – Physical damage	Yes	
			5 – Bare ground	Yes	
			6 – Bracken/scrub cover	Yes	
			7 – Non-native species	Yes	
			Condition Assessment:	5 Passes Moderate Condition.	

3.2.3 There were four separate plantings of ornamental shrubs across the site. These covered 0.08ha of the site area. At the northern end of the site, adjacent to the parking area at the back of the house there are two flower beds. At the southern end of the site there are two areas of ornamental planting adjacent to the eastern side of the drive. In the south-eastern corner of the site there are a further two areas of ornamental planting. Species present include some very large ornamental Leyland Cyprus conifers (*x Cupressocyparis leylandii*), along with spiraea (*Spiraea Sp*), cotoneaster (*Cotoneaster Sp*), forsythia (*Forsythia Sp*), laurel (*Prunus laurocerasus*), buddleia (*Buddleia davidii*), hypericum (*Hypericum Hidcote*), euonymus (*Euonymus fortunei*), with day lily (*Hemerocallis Sp*), shasta daisy (*Leucanthemum Sp*) Flowering currant (*Ribes sanguineum*) and primrose (*Primula vulgaris*). There is no condition assessment required for ornamental shrubs.

3.2.4 There were four areas of ‘Moderate’ condition scrub within the site, totalling an area of 0.07ha. In the southwest of the site there is a small area of tall and dense scrub. To the southern end of the site, there is a clump of bramble (*Rubus fruticosus*) scrub around two extensive conifers, one a large ornamental Leyland Cyprus (*x Cupressocyparis*) conifer and the other an

ornamental horizontal conifer. The northwest corner of the site contains a clump of gorse (*Ulex europaeus*), bramble (*Rubus fruticosus*) and nettles (*Urtica dioica*) with a few daffodils (*Narcissus pseudonarcissus*). The area in the north eastern corner of the site had been taken over by dense bramble.

Condition Assessment Criteria	Condition Achieved (Y/N)
1 – Representative of UKHab description	Yes
2 – Age range	No
3 – Non-native species	Yes
4 – Edge vegetation	Yes
5 – Clearings, glades or rides	No
Condition Assessment:	3 Passes, Moderate condition.

3.2.5 There were mature deciduous and coniferous trees scattered throughout the site. There are several large and mature specimen trees on the site including a large oak tree (*Quercus Robur*), poplar (*Populus x Canadensis*), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*) whitebeam (*Sorbus aria*) and weeping willow (*Salix babylonica*). There are also some large Pine (*Pinus sylvestris*) trees on the site in two separate clumps. These were deemed to be of 'moderate' condition due to fulfilling four of the six assessment criteria.

Condition Assessment Criteria	Condition Achieved (Y/N)
1 – Native species	Yes
2 – Tree canopy	No
3 – Mature/veteran trees	No
4 – Anthropogenic activities	Yes
5 – Micro-habitats	Yes
6 – Ground vegetation	Yes
Condition Assessment:	4 Passes, Moderate Condition

3.2.6 A row of large pine trees, interspersed with poplar, lay along the western site boundary, measuring 0.19km. These were deemed to be of 'Moderate' condition.

Condition Assessment Criteria	Condition Achieved (Y/N)
1 – Native species	No
2 – Tree canopy	Yes
3 – Mature/veteran trees	No
4 – Adjacent vegetation	Yes
5 – Tree health	Yes
Condition Assessment:	3 Passes, Moderate condition.

3.2.7 To the eastern boundary of the site is a 'Good' condition species poor hedgerow, dominated by hawthorn and measured 0.17km.

Attributes and functional groupings	Condition Achieved (Y/N)
A1 – Height	Yes
A2 – Width	No
B1 – Gap – hedge base	Yes
B1 – Gap – hedge canopy	Yes
C1 – Undisturbed ground and perennial vegetation	Yes
C2 – Undesirable perennial vegetation	Yes
D1 – Invasive neophyte species	Yes
D2 – Current damage	Yes
E1 – Tree age	No
E2 – Tree health	Yes
Condition Assessment:	No more than two failures, good condition.

3.2.8 A second 'Good' condition species poor hedgerow with trees was situated along the western boundary. This was a hawthorn hedgerow with poplar standards at regular intervals and measured 0.02km.

Attributes and functional groupings	Condition Achieved (Y/N)
A1 – Height	Yes
A2 – Width	No
B1 – Gap – hedge base	No
B1 – Gap – hedge canopy	Yes
C1 – Undisturbed ground and perennial vegetation	Yes
C2 – Undesirable perennial vegetation	Yes
D1 – Invasive neophyte species	Yes
D2 – Current damage	Yes
E1 – Tree age	Yes
E2 – Tree health	Yes
Condition Assessment:	No more than two failures, good condition.

3.2 Overall, the baseline score for the habitats within the site were 17.32 Habitat Units and 2.25 Hedgerow Units.

3.3 The baseline scores were taken on the same day as the Preliminary Ecological Appraisal (PEA) in July 2022. This is within the peak period for PEA surveys and within the growing season for many plants, allowing accurate assessments of plant health and habitat quality.

		Reference: 220640 Prepared by: Whitcher Wildlife Ltd Site: Pine Lodge Date: 05.08.2022 DAW	
4.0	BNG Good Practice Principles for Development	Justify how each of the BNG Principles has been applied as part of the net gain assessment. The Principles are as follows: 1. Apply the mitigation hierarchy. 2. Avoid losing biodiversity that cannot be offset by gains elsewhere. 3. Be inclusive and equitable. 4. Address risks. 5. Make a measurable Net Gain contribution. 6. Achieve the best outcomes for biodiversity. 7. Be additional. 8. Create a Net Gain legacy. 9. Optimise sustainability. 10. Be transparent.	
5.0	Proposed Design	5.1 The proposed post-development Site will comprise a storey-and-a-half residential building, within the foundations of the previous building. A new	

	access to the property will also be installed. The area of hardstanding within the site will remain the same at 0.16ha. 5.2 The dense scrub and introduced scrub within the site will be removed. The entirety of the modified grassland (0.4ha) is to be enhanced to a modified grassland of 'Good' condition. The scattered trees will be retained with some new trees being planted, taking the urban tree area from 1.53ha to 2.26ha. 5.3 Introduced shrubs, for example Rhododendron, will be planted to the north of the building, covering an area of 0.2ha. Additional trees will be planted around the site, adding 0.73ha to the wood-pasture and parkland, and an additional 0.12ha of lowland meadow will be created. 5.4 The tree line along the west boundary (0.186km) and a small section of native hedgerow with trees along the western boundary (0.015km) of the site will be removed and replaced with metal fencing. The native hedgerow along the eastern boundary (0.172km) is to be enhanced through tree planting to a 'Good' condition. An additional 0.015km of Native hedgerow with trees is to be created in a 'Moderate' condition. 5.5 The proposed development and habitat enhancements within the site will result in a 3.14 increase in Habitat units and a 0.03 increase in hedgerow units. This translates to an 18.13% increase in Habitat Units and a 1.21% increase in Hedgerow Units.
--	--



Key

- Deciduous Tree
- Conifer Tree
- Hedgerow
- Ornamental Hedgerow
- Built Linear Feature
- Lowland Meadows
- Modified Grassland
- Ornamental Planting
- Developed Land, Sealed Surface
- Buildings

Reference: Z20640
 Prepared by: Whitcher Wildlife Ltd
 Site: Pine Lodge
 Date: 05.08.2022



6.0	BNG Metric	<table border="1"> <tr> <td data-bbox="495 201 1155 284" rowspan="3">On-site baseline</td><td data-bbox="1155 201 1317 225"><i>Habitat units</i></td><td data-bbox="1317 201 1487 225">17.32</td></tr> <tr> <td data-bbox="1155 225 1317 248"><i>Hedgerow units</i></td><td data-bbox="1317 225 1487 248">2.25</td></tr> <tr> <td data-bbox="1155 248 1317 284"><i>River units</i></td><td data-bbox="1317 248 1487 284">0.00</td></tr> <tr> <td data-bbox="495 292 1155 375" rowspan="3">On-site post-intervention (Including habitat retention, creation & enhancement)</td><td data-bbox="1155 292 1317 316"><i>Habitat units</i></td><td data-bbox="1317 292 1487 316">20.46</td></tr> <tr> <td data-bbox="1155 316 1317 339"><i>Hedgerow units</i></td><td data-bbox="1317 316 1487 339">2.28</td></tr> <tr> <td data-bbox="1155 339 1317 375"><i>River units</i></td><td data-bbox="1317 339 1487 375">0.00</td></tr> <tr> <td data-bbox="495 383 1155 466" rowspan="3">On-site net % change (Including habitat retention, creation & enhancement)</td><td data-bbox="1155 383 1317 406"><i>Habitat units</i></td><td data-bbox="1317 383 1487 406">18.13%</td></tr> <tr> <td data-bbox="1155 406 1317 430"><i>Hedgerow units</i></td><td data-bbox="1317 406 1487 430">1.21%</td></tr> <tr> <td data-bbox="1155 430 1317 466"><i>River units</i></td><td data-bbox="1317 430 1487 466">0.00%</td></tr> <tr> <td data-bbox="495 499 1155 582" rowspan="3">Off-site baseline</td><td data-bbox="1155 499 1317 523"><i>Habitat units</i></td><td data-bbox="1317 499 1487 523">0.00</td></tr> <tr> <td data-bbox="1155 523 1317 547"><i>Hedgerow units</i></td><td data-bbox="1317 523 1487 547">0.00</td></tr> <tr> <td data-bbox="1155 547 1317 582"><i>River units</i></td><td data-bbox="1317 547 1487 582">0.00</td></tr> <tr> <td data-bbox="495 590 1155 673" rowspan="3">Off-site post-intervention (Including habitat retention, creation & enhancement)</td><td data-bbox="1155 590 1317 614"><i>Habitat units</i></td><td data-bbox="1317 590 1487 614">0.00</td></tr> <tr> <td data-bbox="1155 614 1317 638"><i>Hedgerow units</i></td><td data-bbox="1317 614 1487 638">0.00</td></tr> <tr> <td data-bbox="1155 638 1317 673"><i>River units</i></td><td data-bbox="1317 638 1487 673">0.00</td></tr> <tr> <td data-bbox="495 707 1155 790" rowspan="3">Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)</td><td data-bbox="1155 707 1317 730"><i>Habitat units</i></td><td data-bbox="1317 707 1487 730">3.14</td></tr> <tr> <td data-bbox="1155 730 1317 754"><i>Hedgerow units</i></td><td data-bbox="1317 730 1487 754">0.03</td></tr> <tr> <td data-bbox="1155 754 1317 790"><i>River units</i></td><td data-bbox="1317 754 1487 790">0.00</td></tr> <tr> <td data-bbox="495 798 1155 880" rowspan="3">Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)</td><td data-bbox="1155 798 1317 821"><i>Habitat units</i></td><td data-bbox="1317 798 1487 821">18.13%</td></tr> <tr> <td data-bbox="1155 821 1317 845"><i>Hedgerow units</i></td><td data-bbox="1317 821 1487 845">1.21%</td></tr> <tr> <td data-bbox="1155 845 1317 880"><i>River units</i></td><td data-bbox="1317 845 1487 880">0.00%</td></tr> <tr> <td colspan="2" data-bbox="495 914 1155 965">Trading rules Satisfied?</td><td data-bbox="1155 914 1487 965">No - Check Trading Summary ▲</td></tr> </table>	On-site baseline	<i>Habitat units</i>	17.32	<i>Hedgerow units</i>	2.25	<i>River units</i>	0.00	On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	20.46	<i>Hedgerow units</i>	2.28	<i>River units</i>	0.00	On-site net % change (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	18.13%	<i>Hedgerow units</i>	1.21%	<i>River units</i>	0.00%	Off-site baseline	<i>Habitat units</i>	0.00	<i>Hedgerow units</i>	0.00	<i>River units</i>	0.00	Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00	<i>Hedgerow units</i>	0.00	<i>River units</i>	0.00	Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	3.14	<i>Hedgerow units</i>	0.03	<i>River units</i>	0.00	Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	18.13%	<i>Hedgerow units</i>	1.21%	<i>River units</i>	0.00%	Trading rules Satisfied?		No - Check Trading Summary ▲
On-site baseline	<i>Habitat units</i>	17.32																																																				
	<i>Hedgerow units</i>	2.25																																																				
	<i>River units</i>	0.00																																																				
On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	20.46																																																				
	<i>Hedgerow units</i>	2.28																																																				
	<i>River units</i>	0.00																																																				
On-site net % change (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	18.13%																																																				
	<i>Hedgerow units</i>	1.21%																																																				
	<i>River units</i>	0.00%																																																				
Off-site baseline	<i>Habitat units</i>	0.00																																																				
	<i>Hedgerow units</i>	0.00																																																				
	<i>River units</i>	0.00																																																				
Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00																																																				
	<i>Hedgerow units</i>	0.00																																																				
	<i>River units</i>	0.00																																																				
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	3.14																																																				
	<i>Hedgerow units</i>	0.03																																																				
	<i>River units</i>	0.00																																																				
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	18.13%																																																				
	<i>Hedgerow units</i>	1.21%																																																				
	<i>River units</i>	0.00%																																																				
Trading rules Satisfied?		No - Check Trading Summary ▲																																																				
7.0	Project Implementation and Construction plan	7.1 Overall, there is anticipated to be an 18.13% increase in Habitat Units and a 1.21% increase in Hedgerow Units post-development. This will be achieved through a combination of tree planting, hedgerow enhancement, hedgerow planting and wildflower seed sowing throughout the development. 7.2 The landscape design concepts, as provided in the high-level landscape design and agreed with Historic England will be implemented as part of the overall development alongside the development of the property and boundary treatment. These will be illustrated in a detailed landscape design.																																																				

8.0	Biodiversity Net Gain Management and Monitoring Plan	8.1 This is a single domestic, residential property. The BNG assessment illustrates a significant net gain. Overall, there will be an 18.13% increase in Habitat Units and a 1.21% increase in Hedgerow Units post-development. This will be achieved through a combination of tree planting, hedgerow enhancement, hedgerow planting and wildflower seed sowing throughout the development. 8.2 The gardens will be maintained, as you would expect as a residential property, ensuring the biodiversity units do not fall below the current, present calculations, and maintaining the structures and planting as planned. You would expect the habitats to increase in value as the planting matures. 8.3 A BEMP will be produced illustrating delivery of the long-term management and monitoring of created and enhanced features. They provide detailed management and maintenance information for years 1, 2, 5, 10, 20 and 30 years.